

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A partial ~~Partial~~ oxidation reactor comprising that ~~comprises:~~
 - an elongated jacket along an axis of any orientation,
 - means (12) for supplying a preheated gas that contains oxygen and optionally water vapor,
 - means (9) for supplying a hydrocarbon feedstock,
 - means (11) for evacuation of a hydrogen-rich effluent,
 - a first internal chamber (5) within said jacket for carrying inside of which is carried out an essentially isothermal partial oxidation reaction, wherein said first internal chamber that is connected to said means (9) for supplying ~~the~~ hydrocarbon feedstock and to said means (12) for supplying preheated gas,
 - gas turbulizing means within said first internal chamber that are suitable for creating a perfect mixing flow,
 - means (8) for linking said first chamber (5) to a second chamber (7), wherein said second chamber has with a suitable volume suitable for carrying out a piston flow, said linking means (8) comprising that comprise at least one orifice, and second chamber (7) indirectly exchanging heat ~~in an indirect manner~~ over at least a portion of its length with said means (12) for supplying ~~said thus~~ preheated gas, wherein whereby said the second chamber is connected to said means (11) for evacuating the

hydrogen-rich effluent,
~~wherein said and in which gas supply~~ means (12) for supplying preheated gas
comprises ~~comprise~~ an annular chamber that is essentially coaxial with said ~~the reactor~~
jacket, and said second chamber (7) is essentially coaxial with said jacket.

2. (Currently Amended): A reactor according to claim 1, wherein said ~~in which~~
second chamber (7) comprises a first essentially adiabatic zone that is linked to linking means (8)
and a second zone that exchanges heat with said means (12) for supplying preheated gas ~~the~~
~~oxygen-containing gas~~.

3. (Currently Amended): A reactor according to claim 2, wherein said ~~in which the~~
first zone of second chamber (7) contains a vaporeforming catalyst.

4. (Currently Amended): A reactor according to claim 1, wherein said ~~in which the~~
second chamber is made of a ceramic-type material or a metallic material that is optionally
coated on the side of the hot fluid by a porous or non-porous ceramic material.

5. (Currently Amended): A reactor according to claim 1, wherein said ~~in which the~~
gas turbulizing means inside said first chamber (5) is an internal gas recirculation ring, a baffle,
or a separate injection device that is essentially in countercurrent to the feedstock, on the one
hand, and the oxygen-containing gas, on the other hand.

6. (Currently Amended): A reactor according to claim 2, wherein said ~~in which~~ first chamber (5) and said second chamber (7) are essentially coaxial with said ~~the reactor~~ jacket, and said means (12) for supplying preheated gas comprises an ~~in which the~~ annular chamber which ~~of the gas supply means~~ surrounds first chamber (5) and said second chamber (7).

7. (Withdrawn; Currently Amended): A process for the production of a hydrogen-rich effluent ~~starting~~ from a hydrocarbon feedstock ~~that contains hydrocarbons~~, an alcohol, or an oil ~~that is made from biomass~~, said process comprising reacting said treating ~~the~~ feedstock, alcohol, or oil in a reactor according to claim 1.

8. (Cancelled):

9. (Cancelled):

10. (Cancelled):

11. (Cancelled):

12. (Cancelled):

13. (Cancelled):

14. (Cancelled):

15. (Cancelled):

16. (Cancelled):

17. (Currently Amended): A reactor according to claim 2, wherein said ~~in which the~~ gas turbulizing means inside said first chamber (5) is an internal gas recirculation ring, a baffle, or a separate injection device that is essentially in countercurrent to the feedstock, on the one hand, and the oxygen-containing gas, on the other hand.

18. (Currently Amended): A reactor according to claim 5, wherein said ~~in which~~ first chamber (5) and said second chamber (7) are essentially coaxial with said ~~the reactor~~ jacket, and said means (12) for supplying preheated gas comprises an ~~in which the~~ annular chamber which ~~of the gas supply means~~ surrounds first chamber (5) and said second chamber (7).

19. (Currently Amended): A reactor according to claim ~~17~~ 18, wherein said ~~in which~~ first chamber (5) and said second chamber (7) are essentially coaxial with said ~~the reactor~~ jacket, and said means (12) for supplying preheated gas comprises an ~~in which the~~ annular chamber which ~~of the gas supply means~~ surrounds first chamber (5) and said second chamber (7).

20. (New): A reactor according to claim 1, wherein

said first chamber (5) has a hollow internal volume in which said gas turbulizing means is positioned, and said first chamber (5) is thermally insulated by an adequate heat-insulated thickness (6) positioned along the inside walls of said first chamber (5), and

said second chamber (7) comprises a first essentially adiabatic zone that is linked to linking means (8) and a second zone that exchanges heat with said means (12) for supplying preheated gas.

21. (New): A reactor according to claim 20, wherein said first zone of second chamber (7) contains a vaporeforming catalyst.

22. (New): A reactor according to claim 1, wherein
said first chamber has a hollow internal volume in which said gas turbulizing means is positioned, and said first chamber is thermally insulated by an adequate heat-insulated thickness positioned along the inside walls of said first chamber, and

said second chamber containing a third internal chamber (110) which forms an essentially annular reaction zone constituted by the space defined by the inside wall of said second chamber and the outside wall of said third chamber, and

said third chamber (110) being linked to said annular chamber of said means for supplying heated gas, and said third chamber (110) comprising a hollow cylinder (108) that is attached to wall (118) of said third chamber, said hollow cylinder defining a first volume (107) linked directly to input pipe (112) for delivering gas to be preheated, whereby gas to be preheated flows from said input pipe, through said hollow chamber, through said third chamber, and into

said annular chamber of said means for supplying heated gas.

23. (New): A reactor according to claim 22, wherein said annular reaction zone of said second chamber contains a vaporeforming catalyst.

24. (New): A partial oxidation reactor comprising:
a first elongated chamber along an axis of any orientation comprising a first hydrocarbon input for delivering a hydrocarbon feedstock, and a second input for delivering oxygen containing gas,

a second chamber positioned within said first chamber, wherein said first chamber and said second chamber form a passage, which passage is connected to said second input for delivering oxygen containing gas,

said second chamber (3) having an input for introducing a mixture of input for introducing said hydrocarbon feedstock and said oxygen containing gas, and an output (11) for discharging partial oxidation reaction effluent, said input of said second chamber being in fluid communication with said passage and said a first hydrocarbon input,

said second chamber further comprising a first reaction chamber, a second reaction chamber, and a porous structure connecting said first reaction chamber and said second reaction chamber,

said first reaction chamber having a hollow internal volume (5) and gas turbulizing apparatus comprising baffles within said hollow volume, said first reaction chamber being in fluid communication with said input of said second chamber, and

said second reaction chamber is positioned downstream from said first reaction chamber and separated from said first reaction chamber by said porous structure, said second reaction chamber being in fluid communication with said output of said second chamber,

wherein said passage is an annular chamber, formed between said that is essentially coaxial with said first chamber, and said second reaction chamber (7) is essentially coaxial with said first chamber.